

We claim:

1. A process for preparing a polymer, wherein the process comprises the steps of:
 - providing a reaction mixture comprising a portion of an at least one polar monomer and at least one multivalent cation;
 - adding a mixture comprising the remaining portion of the polar monomer to the reaction mixture; and
 - polymerizing the monomer to form the polymer.
2. A process for preparing a polymer, wherein the process comprises the steps of:
 - providing a reaction mixture comprising at least one polar monomer, at least one multivalent cation, and optionally at least one ethylenically unsaturated monomer;
 - providing a monomer mixture comprising at least one polar monomer and optionally at least one ethylenically unsaturated monomer;
 - adding the monomer mixture to the reaction mixture; and
 - polymerizing the monomer mixture to form the polymer.
3. A process for preparing a polymer, wherein the process comprises the steps of:
 - providing a reaction mixture comprising at least one polar monomer, at least one multivalent cation, and optionally at least one ethylenically unsaturated monomer wherein the at least one multivalent cation is soluble within a solvent;
 - providing a monomer mixture comprising at least one polar monomer and optionally at least one ethylenically unsaturated monomer;
 - adding a portion of the monomer mixture to the reaction mixture to form a polymer seed;
 - adding the remainder of the monomer mixture to the reaction mixture on a gradual basis; and
 - polymerizing the monomer mixture to form the polymer.

4. The process of claim 1, 2, or 3 wherein the reaction mixture in the providing step comprises at least 25% by weight or greater of the total amount of polar monomer.

5. The process of claim 4 wherein the reaction mixture in the providing step comprises at least 50% by weight or greater of the total amount of polar monomer.

6. The process of claim 1, 2, or 3 wherein the amount of the polar monomer relative to the amount of the multivalent cation is at least two molar equivalents of the polar monomer.

7. The process of claim 6 wherein the amount of the polar monomer relative to the amount of the multivalent cation is sufficient to neutralize the charge of the multivalent cation.

8. The process of claim 1, 2, or 3 wherein said polar monomer comprises an acid containing monomer.

9. The process of claim 8 wherein said acid containing monomer is selected from the group consisting of methacrylic anhydride, acrylic acid, methacrylic acid, itaconic acid, maleic acid, fumaric acid, acryloxypropionic acid, (meth)acryloxypropionic acid, styrene sulfonic acid, ethylmethacrylate-2-sulphonic acid, 2-acrylamido-2-methylpropane sulphonic acid; phosphoethylmethacrylate; the corresponding salts of the acid containing monomer, and combinations thereof.

10. The process of claim 1, 2, or 3 wherein said polar monomer comprises a polar oligomer.

11. The process of claim 1, 2, or 3 wherein said polar monomer comprises a low molecular weight, polymeric stabilizer.

12. The process of claim 1, 2, or 3 wherein the multivalent cation comprises at least one divalent or trivalent cation.
13. The process of claim 1, 2, or 3 wherein the reaction mixture further comprises at least one ethylenically unsaturated monomer.
14. The process of claim 1, 2, or 3 wherein the at least one ethylenically unsaturated monomer is selected from the group consisting of: C₁ - C₁₈ alkyl (meth)acrylate, 2-ethylhexyl (meth)acrylate, isobornyl (meth)acrylate, lauryl (meth)acrylate, allyl (meth)acrylate, stearyl (meth)acrylate, acrylic acid, itaconic acid, methacrylic acid, butadiene, vinyl acetate, vinyl versatate, styrene, vinyl aromatic monomers, divinylbenzene, divinylpyridine, divinyltoluene, diallyl phthalate, butylene glycol di(meth)acrylate, ethylene glycol di(meth)acrylate, divinylxylene, divinylethylbenzene, divinylsulfone, divinylketone, divinylsulfide, diallyl maleate, diallyl fumarate, diallyl succinate, diallyl carbonate, diallyl malonate, diallyl oxalate, diallyl adipate, diallyl sebacate, divinyl sebacate, diallyl tartrate, diallyl silicate, triallyl tricarballylate, triallyl aconitate, triallyl citrate, triallyl phosphate, N,N -methylene dimethacrylamide, N,N -methylene dimethacrylamide, N,N -ethylenediacrylamide, trivinylbenzene, and the polyvinyl ethers of glycol, glycerol, pentaerythritol, resorcinol, monothio and dithio derivatives of glycols, and combinations thereof.
15. The process of claim 1, 2, or 3 wherein said polymerizing step comprises emulsion polymerization.
16. The process of claim 1, 2, or 3 wherein said polymerizing step comprises solution polymerization.
17. The process of claim 1, 2, or 3 wherein said polymerizing step comprises suspension polymerization.
18. The process of claim 1, 2, or 3 wherein said polymerizing step comprises mini-emulsion polymerization.

19. The process of claim 1, 2, or 3 wherein the glass transition temperature of said polymer is in the range of from -80°C to 50°C.

20. The process according to claim 1, 2, or 3, wherein the glass transition temperature of said polymer is in the range of from -80 °C to 140 °C.

21. The process of claim 1 or 2 wherein the multivalent cation is water soluble.

22. The process of claim 3 wherein the solvent comprises water.